UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,430	08/17/2001	Bing Chao	EKM-81895	3438

30764 7590 07/13/2005

SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
333 SOUTH HOPE STREET
48TH FLOOR
LOS ANGELES, CA 90071-1448

EXAMINER	
DUONG, THANH P	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/932,430	CHAO ET AL.	
	Examiner	Art Unit	
	Tom P. Duong	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 11, 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 39-45, 47-48, 52-59, 62-63, and 67-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (5,346,217) and Peterson (6,162,133). Tsuchiya discloses a method of manufacturing (Abstract) a golf club (Fig. 1) comprising: forming a crown (10b), a skirt (rear body), a sole (10c), a striking face (21), and front opening (Fig. 4), crown (10b) having a thickness less than about 0.8 mm (Col. 4, lines 48-51) over at least a crown transition distance of about 20 mm measured rearward from the front opening; forming a striking plate (10a) from a material comprising a titanium alloy (Col. 6, lines 58-68) of alpha-beta type (Col. 7, lines 13-15 and Tables 1 and 8) having thickness 2.0-3.5 mm (Col. 4, lines 48-50); attaching the striking plate (10a) to the front opening (Fig. 4); a body having a height ranging from 45-

60 mm and width ranging from 70 mm or larger; plastic working (Col. 4, lines 65-67) and solution treatment (Col. 7, lines 1-5). With respect to the unitary body construction, it would have been obvious in view of Tsuchiya to one having ordinary skill in the art to fabricate the club head body comprising a plurality of club parts or a unitary body since it has been held that a one- piece construction versus several parts secured together as a single unit is an obvious matter of design choice. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965). Alternatively, Peterson teaches a unitary, one-piece body 32, provides the advantage for its uniformed construction such as manufacturing repeatability with respect to loft, lie and face angle, weight distribution, and reduction in manufacturing cost (Col. 4, lines 23-48). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Tsuchiya with a unitary head construction as taught by Peterson in order to gain the above advantages. With respect to claim 47, the striking plate of Tsuchiya is made of the same material as the claimed invention; thus, it inherently has the same material properties. See *In re Best*, 562 F.2d 1252, 195 USPQ 430, 433 (CCPA 1977). With respect to the sole having a sole transition less than 1.0 mm, Tsuchiya in view of Peterson discloses a sole thickness of 1.0 mm (Col. 2, lines 15-23), which is within the proximity of the claimed value and is deemed to be obvious over the claimed thickness. Peterson also makes it clear that the thickness of each surfaces such as face plate, crown plate, sole plate, and skirt may be larger or smaller depending on desired strength and configuration of club head or materials used to construct the club head and the thickness may vary to distribute the weight in the desired locations of the club head

(Col. 5, lines 1-8). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Tsuchiya with a sole with sole transition thickness less than 0.8 mm as taught by Peterson depending on the desired strength and configuration of the club head.

3. Claims 46 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Tsuchiya et al. '217 in view of Peterson '133) in view of Hocknell et al. (6,440,011). The applied references fail to disclose a striking plate having periphery region thickness 0.5 mm less than the geometric center. Hocknell teaches the a striking plate 72 with periphery region 110 (0.069-0.061 inch) less than concentric region 102 (0.110 – 0.090) and such feature enhances flexibility of the striking plate which corresponds to greater COR (Col. 5, lines 59-67). Thus, it would have been obvious in view of Hocknell to one having ordinary skill in the art to modify the striking plate of the applied references with a striking plate having periphery thickness less than its geometric center as taught by Peterson '133 in order to enhance flexibility of the striking face, which improves COR.

4. Claims 49-51 and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Tsuchiya et al. '217 in view of Peterson '133) in view of Japanese Publication 2001-029518 (JP '518). The applied references (Tsuchiya) disclose cold forming (Col. 4, lines 61-68) and heat treatment (Col. 5, lines 1-7) of the striking plate but fail to disclose cold forming of the titanium sheet ranging from

15-70%. JP '518 teaches 15% or more of the cold working process in club head and solution heat treatment (Section 0006 and Section 0012) and such metal forming process provide the benefits of increased stress resistance and hardness (Page 3, Section 0017-0018). Thus, it would have been obvious in view of JP '518 to one having ordinary skill in the art to fabricate the club head of the applied references with the forming process with cold working of 5% or more as taught by JP '518 to gain the above benefits.

5. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. '217 in view of Hocknell et al. '011 and Peterson (6,162,133). Tsuchiya '217 discloses a method of manufacturing a golf club head comprising: casting a body having a crown (10b), a skirt (rear body), a sole (10c), and a face (21), the face defining a front opening (Fig. 4), wherein the body is cast from a material comprising titanium (Col. 6, lines 58-68); cold forming a striking plate (Col. 4, lines 65-67), the striking plate having a maximum thickness of less than or equal to 2.2 mm (Col. 4, lines 48-50) with a tensile strength of at least 1400 MPa , a yield strength of 1250 MPa, a hardness of 30 HRC, percent elongation of 7% and density less than 5 g/cm^3 (Tables 1 and 8); and welding of the striking plate with the front opening of the body (Col. 5, lines 5-8); crown (10b) having a thickness less than about 0.8 mm (Col. 4, lines 48-51) over at least a crown transition distance of about 20 mm measured rearward from the front opening; sole transition region less than 1.0 mm (Col. 4, lines 48-56). Tsuchiya fails to disclose a striking plate having periphery region thickness is 0.5 mm less than the geometric

center. Hocknell teaches the a striking plate 72 with periphery region 110 (0.069-0.061 inch) less than concentric region 102 (0.110 – 0.090) and such feature enhances flexibility of the striking plate which corresponds to a greater COR (col. 5, lines 59-67). Thus, it would have been obvious in view of Hocknell to one having ordinary skill in the art to modify the striking plate of Tsuchiya with a striking plate having periphery thickness less than its geometric center in order to enhance flexibility of the striking face, which improves COR. With respect to the unitary body construction, it would have been obvious in view of Tsuchiya to one having ordinary skill in the art to fabricate the club head body comprising a plurality of club parts or a unitary body since it has been held that a one-piece construction versus several parts secured together as a single unit is an obvious matter of design choice. See *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965). Alternatively, Peterson teaches a unitary, one-piece body 32, provides the advantage for its uniformed construction such as manufacturing repeatability with respect to loft, lie and face angle, weight distribution, and reduction in manufacturing cost (Col. 4, lines 23-48). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Tsuchiya with a unitary head construction as taught by Peterson in order to gain the above advantages. With respect to the sole having a sole transition less than 1.0 mm, Tsuchiya in view of Peterson discloses a sole thickness of 1.0 mm (Col. 2, lines 15-23), which is within the proximity of the claimed value and is deemed to be obvious over the claimed thickness. Peterson also makes it clear that the thickness of each surfaces such as face plate, crown plate, sole plate, and skirt may be larger or smaller depending

on desired strength and configuration of club head or materials used to construct the club head and the thickness may vary to distribute the weight in the desired locations of the club head (Col. 5, lines 1-8). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Tsuchiya with a sole with sole transition thickness less than 0.8 mm as taught by Peterson depending on the desired strength and configuration of the club head.

Response to Arguments

Applicant's arguments filed 5/11/05 have been fully considered but they are not persuasive. With respect to the Applicants' argument of the prior art fail to disclose a unitary body, Examiner respectfully disagrees. It is conventional in the golf club art to fabricate the club head either with a unitary body or welding separate club parts to form a club head. Applicants have not disclosed an advantage or unexpected results for forming a unitary body, club head. Thus, one of ordinary skill in the art would have expected the club head of Tsuchiya perform equally well as the club head of the claimed invention, since the mere difference in the manufacturing technique appears to be an obvious matter of design choice. Tsuchiya discloses the club head can be formed from separate piece to optimize weight distribution and enhances flexibility of the club parts such as the crown portion, which improves COR. Alternatively, Peterson teaches it is desirable to form a club head by unitary construction to enhance manufacturing repeatability with respect to loft, lie, and face angle. With respect to the argument of Hocknell '011 fail to disclose a crown having a thickness of less than about

0.8 mm over the crown transition distance of about 20 mm rearward from the opening, Examiner respectfully disagrees. Tsuchiya discloses the crown having a thickness of the claimed invention as described in paragraph 2 with crown transition distance of 20 mm measured from the front opening. With respect to the sole having a sole transition less than 1.0 mm, Tsuchiya in view of Peterson discloses a sole thickness of 1.0 mm (Col. 2, lines 15-23), which is closed to the claimed value and is deemed to be obvious over the claimed thickness. Peterson also makes it clear that the thickness of each surfaces such as face plate, crown plate, sole plate, and skirt may be larger or smaller depending on desired strength and configuration of club head or materials used to construct the club head and the thickness may vary to distribute the weight in the desired locations of the club head (Col. 5, lines 1-8). Thus, it would have been obvious in view of Peterson to one having ordinary skill in the art to provide a golf club head of Tsuchiya with a sole with sole transition thickness less than 0.8 mm as taught by Peterson depending on the desired strength, configuration, and weight distribution of the club head.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JERRY D. JOHNSON
PRIMARY EXAMINER
GROUP 1100

Tom Duong
July 7, 2005
TD